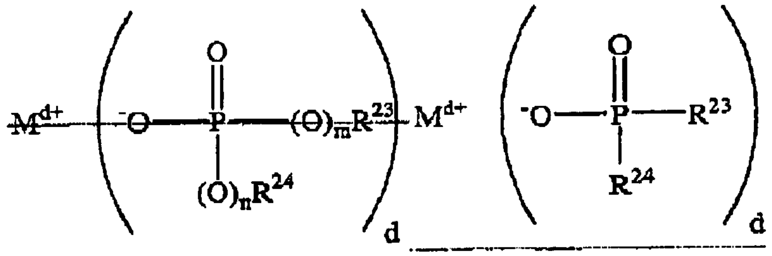
AMENDMENTS TO THE CLAIMS

1. (currently amended) A curable composition, comprising:

a functionalized poly(arylene ether) resin;

an acryloyl monomer; and

a metallophosphorus flame retardant having the formula

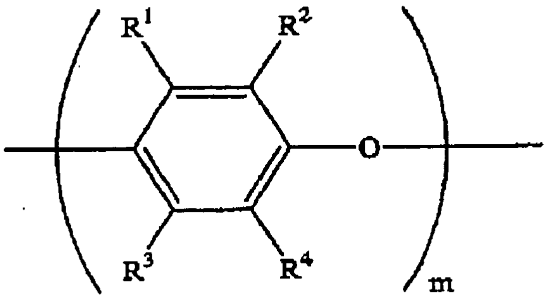


wherein M is Mg, Ca, Al, Sb, Sn, Ge, Ti, Zn, Fe, Zr, Ce, Bi, Sr, Mn, Li, Na, or K; d is 1, 2, 3, or 4 according to the identity of M and its oxidation state; and each occurrence of R^{23} and R^{24} is independently C_1-C_{18} hydrocarbyl~~; and each occurrence of m and n is 0~~.

2. (original) The composition of claim 1, wherein the functionalized poly(arylene ether) resin is a capped poly(arylene ether) resin having the formula

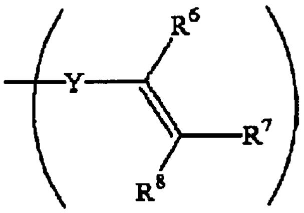
$$Q(J\text{-}K)_y$$

wherein Q is the residuum of a monohydric, dihydric, or polyhydric phenol; y is 1 to 100; J comprises repeating structural units having the formula

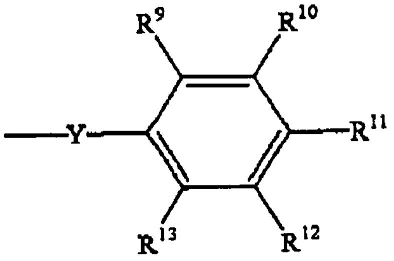


wherein R^1 and R^3 are each independently selected from the group consisting of hydrogen, halogen, primary or secondary C_1-C_{12} alkyl, C_2-C_{12} alkenyl, C_2-C_{12} alkynyl, C_1-C_{12} aminoalkyl, C_1-C_{12} hydroxyalkyl, phenyl, C_1-C_{12} haloalkyl, C_1-C_{12} hydrocarbyloxy, and C_2-C_{12} halohydrocarbyloxy wherein at least two carbon atoms separate the halogen and oxygen atoms; R^2 and R^4 are each independently selected from the group consisting of halogen, primary or secondary C_1-C_{12} alkyl, C_2-C_{12} alkenyl, C_2-C_{12} alkynyl, C_1-C_{12} aminoalkyl, C_1-C_{12} hydroxyalkyl, phenyl, C_1-C_{12} haloalkyl, C_1-C_{12} hydrocarbyloxy, and C_2-C_{12} halohydrocarbyloxy wherein at least two carbon atoms separate the halogen and oxygen atoms; m is 1 to about 200; and K is a capping group selected from the group consisting of

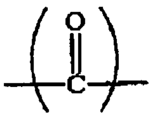
$-Y-R^5$,



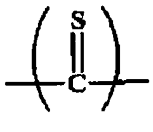
, and



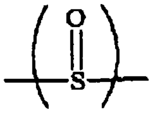
wherein R^5 is C_1-C_{12} alkyl; R^6-R^8 are each independently selected from the group consisting of hydrogen, C_1-C_{18} hydrocarbyl, C_2-C_{18} hydrocarbyloxycarbonyl, nitrile, formyl, carboxylate, imidate, and thiocarboxylate; R^9-R^{13} are each independently selected from the group consisting of hydrogen, halogen, C_1-C_{12} alkyl, hydroxy, and amino; and wherein Y is a divalent group selected from the group consisting of



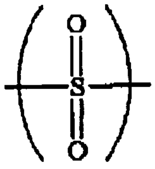
$-C(=O)-$,



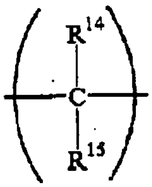
$-C(=S)-$,



$-S(=O)-$,



$-S(=O)_2-$, and

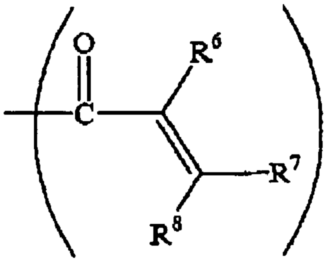


$-C(R^{14})(R^{15})-$

wherein R^{14} and R^{15} are each independently selected from the group consisting of hydrogen and C_1-C_{12} alkyl.

3. (original) The curable composition of claim 2, wherein Q is the residuum of a monohydric phenol.

4. (original) The curable composition of claim 1, wherein the capped poly(arylene ether) comprises at least one capping group having the structure

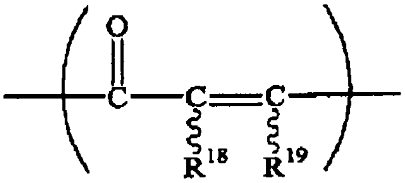


wherein R^6-R^8 are each independently selected from the group consisting of hydrogen, C_1-C_{18} hydrocarbyl, C_2-C_{12} hydrocarbyloxycarbonyl, nitrile, formyl, carboxylate, imidate, and thiocarboxylate.

5. (original) The curable composition of claim 4, wherein R^6 is hydrogen or methyl, and R^7 and R^8 are hydrogen.

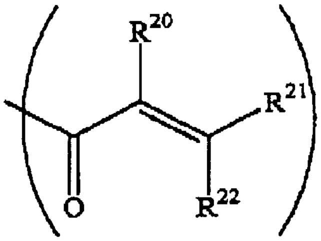
6. (original) The curable composition of claim 1, comprising about 5 to about 90 parts by weight of the functionalized poly(arylene ether) per 100 parts by weight total of the functionalized poly(arylene ether) and the acryloyl monomer.

7. (original) The composition of claim 1, wherein the acryloyl monomer comprises at least one acryloyl moiety having the structure



wherein R^{18} and R^{19} are each independently selected from the group consisting of hydrogen and C_1-C_{12} alkyl, and wherein R^{18} and R^{19} may be disposed either cis or trans about the carbon-carbon double bond.

8. (original) The composition of claim 1, wherein the acryloyl monomer comprises at least one acryloyl moiety having the structure



wherein R^{20}-R^{22} are each independently selected from the group consisting of hydrogen, C_1-C_{12} hydrocarbyl, C_2-C_{18} hydrocarbyloxycarbonyl, nitrile, formyl, carboxylate, imidate, and thiocarboxylate.

9. (original) The composition of claim 8, wherein the acryloyl monomer comprises at least two acryloyl moieties.

10. (original) The composition of claim 8, wherein the acryloyl monomer comprises at least three acryloyl moieties.

11. (original) The composition of claim 1, wherein the acryloyl monomer comprises trimethylolpropane tri(meth)acrylate, 1,6-hexanediol di(meth)acrylate, neopentyl glycol di(meth)acrylate, ethylene glycol di(meth)acrylate, propylene glycol di(meth)acrylate, cyclohexanedimethanol di(meth)acrylate, butanediol di(meth)acrylate, diethylene glycol di(meth)acrylate, triethylene glycol di(meth)acrylate, isobornyl (meth)acrylate, methyl (meth)acrylate, methacryloxypropyl trimethoxysilane, ethoxylated (2) bisphenol A di(meth)acrylate, or a mixture of at least two of the foregoing acryloyl monomers.

12. (original) The composition of claim 1, comprising about 10 to about 95 parts acryloyl monomer per 100 parts by weight total of the functionalized poly(arylene ether) and the acryloyl monomer.

13. (original) The composition of claim 1, wherein each occurrence of R^{23} and R^{24} is independently C_1-C_6 alkyl.

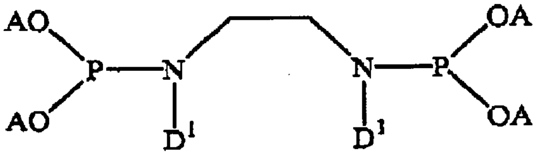
14. (original) The composition of claim 1, wherein each occurrence of R^{23} and R^{24} is methyl or ethyl.

15. (previously presented) The composition of claim 1, wherein M is aluminum.

16. (original) The composition of claim 1, wherein the metallophosphorus flame retardant is aluminum tris(diethylphosphinate).

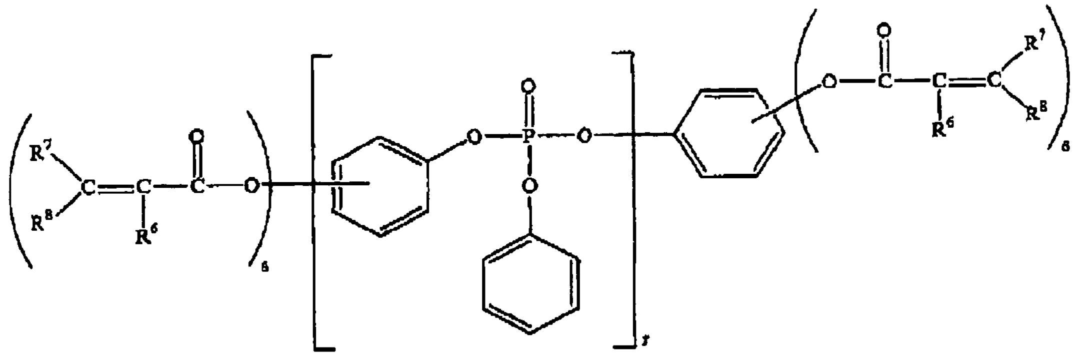
17. (original) The composition of claim 1, comprising about 0.1 to about 50 parts by weight of the metallophosphorus flame retardant per 100 parts by weight total of the functionalized poly(arylene ether) and the acryloyl monomer.

18. (original) The composition of claim 1, further comprising an aromatic bisphosphoramidate flame retardant of the formula



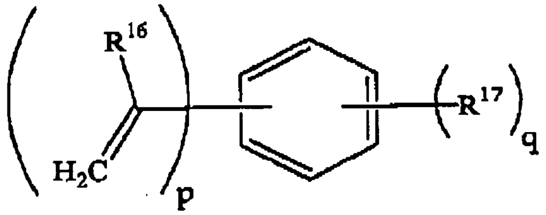
wherein A is a monocyclic aromatic radical and D^1 is a C_{1-4} primary or secondary alkyl radical or both D^1 radicals taken together are ethylene.

19. (original) The composition of claim 1, further comprising an aromatic polyphosphate flame retardant having the formula



wherein each occurrence of R^6-R^8 is independently selected from the group consisting of hydrogen, C_1-C_{18} hydrocarbyl, C_2-C_{12} hydrocarbyloxycarbonyl, nitrile, formyl, carboxylate, imidate, and thiocarboxylate; r is 2 to about 20; and each occurrence of s is 0, 1, or 2, with the proviso that at least one occurrence of s is 1.

20. (original) The composition of claim 1, further comprising an alkenyl aromatic compound having the formula



wherein each occurrence of R^{16} is independently hydrogen or C_1-C_{18} hydrocarbyl; each occurrence of R^{17} is independently halogen, C_1-C_{12} alkyl, C_1-C_{12} alkoxyl, or C_6-C_{18} aryl; p is 1 to 4; and q is 0 to 5.

21. (currently amended) The curable composition of claim 20, wherein the alkenyl aromatic monomer is selected from the group consisting of styrene, α-methylstyrene, 2-methylstyrene, 3-methylstyrene, 4-methylstyrene, 2-t-butylstyrene, 3-t-butylstyrene, 4-t-butylstyrene, 1,3-divinylbenzene, 1,4-divinylbenzene,

1,3-diisopropenylbenzene, 1,4-diisopropenylbenzene, styrenes having from 1 to 5 halogen substituents on the aromatic ring, and combinations thereof.

22. (original) The composition of claim 20, comprising about 10 to about 500 parts by weight alkenyl aromatic monomer per 100 parts by weight total of the functionalized poly(arylene ether) and the acryloyl monomer.

23. (original) The composition of claim 1, further comprising an allylic monomer.

24. (currently amended) The composition of claim 23, wherein the allylic monomer is selected from the group consisting of diallyl phthalate, diallyl isophthalate, triallyl mellitate, triallyl mesate, triallyl benzenes, triallyl cyanurate, triallyl isocyanurate, and mixtures thereof.

25. (original) The composition of claim 23, comprising about 10 to about 500 parts by weight allylic monomer per 100 parts by weight total of the functionalized poly(arylene ether) and the acryloyl monomer.

26. (original) The curable composition of claim 1, further comprising about 5 to about 95 weight percent of a particulate filler, based on the total weight of the composition.

27. (original) The curable composition of claim 26, wherein the particulate filler is fused silica.

28. (original) The curable composition of claim 26, wherein the particulate filler comprises a first fused silica having an average particle size of about 0.03 micrometer to less than 1 micrometer, and a second fused silica having an average particle size greater than 1 micrometer to about 30 micrometers.

29. (original) The curable composition of claim 1, further comprising a curing catalyst.

30. (currently amended) The curable composition of claim 29, wherein the curing catalyst is selected from the group consisting of benzoyl peroxide, dicumyl peroxide, methyl ethyl ketone peroxide, lauryl peroxide, cyclohexanone peroxide, t-butyl hydroperoxide, t-butyl benzene hydroperoxide, t-butyl peroctoate, 2,5-dimethylhexane-2,5-dihydroperoxide, 2,5-dimethyl-2,5-di(t-butylperoxy)-hex-3-yne, di-t-butylperoxide, t-butylcumyl peroxide, α,α'-bis(t-butylperoxy-m-isopropyl)benzene, 2,5-dimethyl-2,5-di(t-butylperoxy)hexane, di(t-butylperoxy) isophthalate, t-butylperoxybenzoate, 2,2-bis(t-butylperoxy)butane, 2,2-bis(t-butylperoxy)octane, 2,5-dimethyl-2,5-di(benzoylperoxy)hexane, di(trimethylsilyl)peroxide, trimethylsilylphenyltriphenylsilyl peroxide, and mixtures thereof.

31. (original) The curable composition of claim 1, further comprising a curing inhibitor.

32. (currently amended) The curable composition of claim 31, wherein the curing inhibitor is selected from the group consisting of diazoaminobenzene, phenylacetylene, sym-trinitrobenzene, p-benzoquinone, acetaldehyde, aniline condensates, N,N'-dibutyl-o-phenylenediamine, N-butyl-p-aminophenol, 2,4,6-triphenylphenoxyl, pyrogallol, catechol, hydroquinone, C_1-C_6-alkyl-substituted

catechols, dialkylhydroquinone, 2,4,6-dichloronitrophenol, halogen-ortho-nitrophenols, alkoxyhydroquinone, mono- and di- and polysulfides of phenols and catechols, thiols and oximes and hydrazones of quinone, phenothiazine, dialkylhydroxylamines, and combinations thereof.

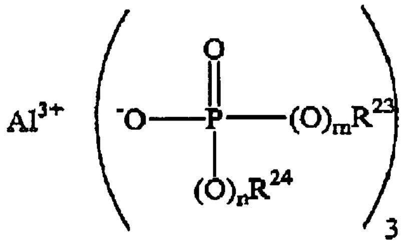
33. (currently amended) The curable composition of claim 1, further comprising an additive selected from the group consisting of dyes, pigments, colorants, antioxidants, heat stabilizers, light stabilizers, plasticizers, lubricants, flow modifiers, drip retardants, flame retardants, antiblocking agents, antistatic agents, flow-promoting agents, processing aids, substrate adhesion agents, mold release agents, toughening agents, low-profile additives, stress-relief additives, and combinations thereof.

34. (currently amended) A curable composition, comprising:

a (meth)acrylate-capped poly(2,6-dimethyl-1,4-phenylene ether) resin, a (meth)acrylate-capped poly(2,6-dimethyl-1,4-phenylene ether-*co*-2,3,6-trimethyl-1,4-phenylene ether) resin, or a mixture thereof;

an acryloyl monomer selected from the group consisting of trimethylolpropane tri(meth)acrylate, hexanediol di(meth)acrylate, cyclohexanedimethanol di(meth)acrylate, methacryloxypropyl trimethoxysilane, ethoxylated (2) bisphenol A dimethacrylate, ~~or a~~and mixtures thereof;

an aluminophosphorus flame retardant having the formula



$$Al^{3+}\left({}^{-}O-\overset{\overset{\displaystyle O}{\|}}{\underset{\underset{\displaystyle (O)_nR^{24}}{|}}{P}}-(O)_mR^{23}\right)_3$$

wherein each occurrence of R^{23} and R^{24} is independently C_1-C_6 alkyl, and each occurrence of m and n is 0; and

fused silica.

35. (original) The curable composition of claim 34, further comprising a curing catalyst.

36. (original) A cured composition, comprising the reaction product obtained by curing the curable composition of claim 34.

37. (currently amended) A curable composition, comprising:

about 5 to about 40 parts by weight of a (meth)acrylate-capped poly(2,6-dimethyl-1,4-phenylene ether) resin, a (meth)acrylate-capped poly(2,6-dimethyl-1,4-phenylene ether-*co*-2,3,6-trimethyl-1,4-phenylene ether) resin, or a mixture thereof;

about 60 to about 95 parts by weight of an acryloyl monomer selected from the group consisting of trimethylolpropane tri(meth)acrylate, hexanediol di(meth)acrylate, cyclohexanedimethanol di(meth)acrylate, methacryloxypropyl trimethoxysilane, ethoxylated (2) bisphenol A di(meth)acrylate, ~~or a~~and mixtures thereof;

about 1 to about 50 parts by weight of aluminum tris(diethylphosphinate); and

about 100 to about 2,000 parts by weight of fused silica;

wherein all parts by weight are based on 100 parts by weight total for the (meth)acrylate-capped poly(arylene ether) resin and the acryloyl monomer.

38. (original) The curable composition of claim 37, further comprising a curing catalyst.

39. (original) A cured composition, comprising the reaction product obtained by curing the curable composition of claim 37.

40. (original) A cured composition, comprising the reaction product obtained by curing the curable composition of claim 1.

41. (original) The cured composition of claim 40, having a UL94 rating of V-0 or V-1.

42. (original) The cured composition of claim 40, having a glass transition temperature of at least 120°C.

43. (original) The cured composition of claim 40, wherein the composition dried for 24 hours at 115°C exhibits a weight difference less than ±0.05% after exposure to 168 hours at 85°C and 85% relative humidity and redrying for 24 hours at 115°C.

44. (original) An article comprising the cured composition of claim 36.

45. (original) An article comprising the cured composition of claim 39.

46. (original) An article comprising the cured composition of claim 40.

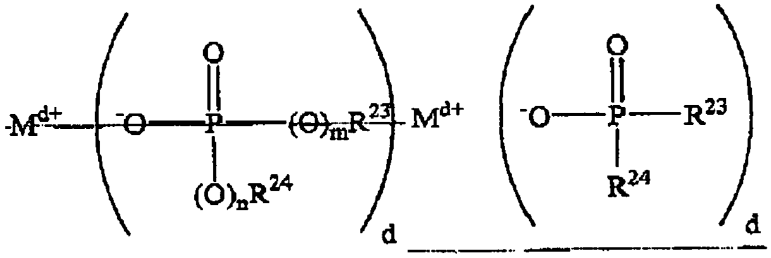
47. (currently amended) A method of preparing a curable composition, comprising:

blending

a functionalized poly(arylene ether) resin;

an acryloyl monomer; and

a metallophosphorus flame retardant having the formula



$$\cancel{M^{d+}\left({}^{-}O-\overset{\overset{O}{\|}}{\underset{\underset{(O)_nR^{24}}{|}}{P}}-\cancel{(O)_m}R^{23}\right)_d}\; M^{d+}\underline{\left({}^{-}O-\overset{\overset{O}{\|}}{\underset{\underset{R^{24}}{|}}{P}}-R^{23}\right)_d}$$

wherein M is Mg, Ca, Al, Sb, Sn, Ge, Ti, Zn, Fe, Zr, Ce, Bi, Sr, Mn, Li, Na, or K; d is 1, 2, 3, or 4 according to the identity of M and its oxidation state; and each occurrence of R^{23} and R^{24} is independently C_1-C_{18} hydrocarbyl~~; and each occurrence of m and n is 0~~

to form an intimate blend.